

WHAT IS CLAIMED IS:*Subaj*

5 1. A method of locating set-top terminals within a cable television system and using location information for said terminals to improve efficient operation of said cable television system, the method comprising:

10 determining which upstream plant of a plurality of upstream plants transmits a first message to a system controller from a particular set-top terminal; and

identifying a downstream plant associated with the upstream plant that transmits said first message from said set-top terminal;

15 wherein a location of said set-top terminal within said system comprises an identification of said upstream plant and said associated downstream plant.

20 2. The method of claim 1, further comprising: transmitting a request message with said system controller to a set-top terminal over said cable television system; and

25 responding to receipt of said request message by said set-top terminal by transmitting said first message from said set-top terminal to said system controller.

30 3. The method of claim 1, further comprising assigning attributes for said set-top terminal based on said location of said set-top terminal.

4. The method of claim 3, further comprising:
associating attributes for said set-top terminal
with each upstream plant and downstream plant in said
system;

5 wherein said assigning said attributes for said
set-top terminal is accomplished using attributes
associated with said upstream plant that transmits
said first message and attributes associated with said
downstream plant corresponding to said upstream plant
10 that transmits said first message.

5. The method of claim 4, further comprising:
associating attributes for said set-top terminal
with each upstream path and headend in the system; and
15 assigning attributes to a set-top terminal based
on attributes associated with an upstream path and
headend that correspond to that set-top terminal.

6. The method of claim 1, further comprising
20 polling said set-top terminals for data with said
controller by signaling selected multiple terminals
simultaneously and selecting said selected terminals
based on determined locations for said selected
terminals to minimize data collisions during said
25 polling.

7. The method of claim 1, wherein said set-top
terminal transmits said first message to said
controller without having received a request message
30 from said controller requesting transmission of said
first message.

8. The method of claim 7, further comprising entering a command to said set-top terminal to cause said set-top terminal to transmit said first signal.

5 9. The method of claim 1, further comprising identifying an upstream or downstream plant that is malfunctioning by identifying a group of said set-top terminals which fail to communicate with said controller, said group of set-top terminals being
10 associated with said malfunctioning upstream or downstream plant.

10 10. The method of claim 1, wherein each of said upstream plants comprise a telephone line over which
15 said set-top terminal sends said first message to said controller.

20 11. A system for locating set-top terminals within a cable television system and using location information for said terminals to improve efficient operation of said cable television system, comprising:

25 a system controller;
a population of set-top terminals;
a plurality of downstream plants with which said system controller transmits data messages to said set-top terminals; and
a plurality of upstream plants with which said set-top terminals transmit messages to said system controller;

30 wherein said controller determines a location of each set-top terminal within said system by determining which upstream plant transmits a first message to said system controller from a particular set-top terminal; and identifying a downstream plant

associated with that upstream plant that transmits said first message from said set-top terminal.

12. The system of claim 11, wherein:

5 said controller transmits a request message to a set-top terminal; and

 said set-top terminal transmits said first message to said system controller in response to receipt of said request message.

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13. The system of claim 11, wherein said controller assigns attributes for each set-top terminal based on said location of said set-top terminal.

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14. The system of claim 13, wherein:

 said controller associates attributes for said set-top terminal with each upstream plant and downstream plant in said system; and

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 said controller assigns attributes for each set-top terminal using said attributes associated with said upstream plant that transmits said first message and attributes associated with the downstream plant associated with said upstream plant that transmits said first message.

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15. The system of claim 11, wherein said controller polls said set-top terminals for data by signaling selected multiple terminals simultaneously and selecting said selected terminals based on determined locations for said selected terminals to minimize data collisions during said polling.

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16. The system of claim 11, wherein said set-top terminal transmits said first message to said controller without having received a request message from said controller requesting transmission of said first message.

17. The system of claim 16, wherein said set-top terminal transmits said first message to said controller in response to a command entered by a user to said set-top terminal.

18. The system of claim 11, wherein said controller identifies an upstream or downstream plant that is malfunctioning by identifying a group of said set-top terminals that fail to communicate with said controller, said group of set-top terminals being those having a location defined with said malfunctioning upstream or downstream plant.

19. The system of claim 11, wherein each of said upstream plants comprise a telephone line over which said set-top terminal sends said first message to said controller.

20. A system for locating set-top terminals within a cable television system and using location information for said terminals to improve efficient operation of said cable television system, the system comprising:

means for determining which upstream plant of a plurality of upstream plants transmits a first message to a system controller from a particular set-top terminal; and

means for identifying a downstream plant associated with the upstream plant that transmits said first message from said set-top terminal;

wherein a location of said set-top terminal within said system comprises an identification of said upstream plant and said associated downstream plant.

21. The system of claim 20, further comprising:
means for transmitting a request message to a set-top terminal over said cable television system; and
means for responding to receipt of said request message by said set-top terminal by transmitting said first message transmitted from said set-top terminal to said system controller.

22. The system of claim 20, further comprising means for assigning attributes for said set-top terminal based on said location of said set-top terminal.

23. The system of claim 20, further comprising means for automatically registering a set-top terminal which has been added to said cable system without advance notice to a system operator, wherein said registering comprises determining said location information for that terminal being registered.

24. The system of claim 20, further comprising means for providing physical and logical topology information for said cable television system based on said location information of said terminals.